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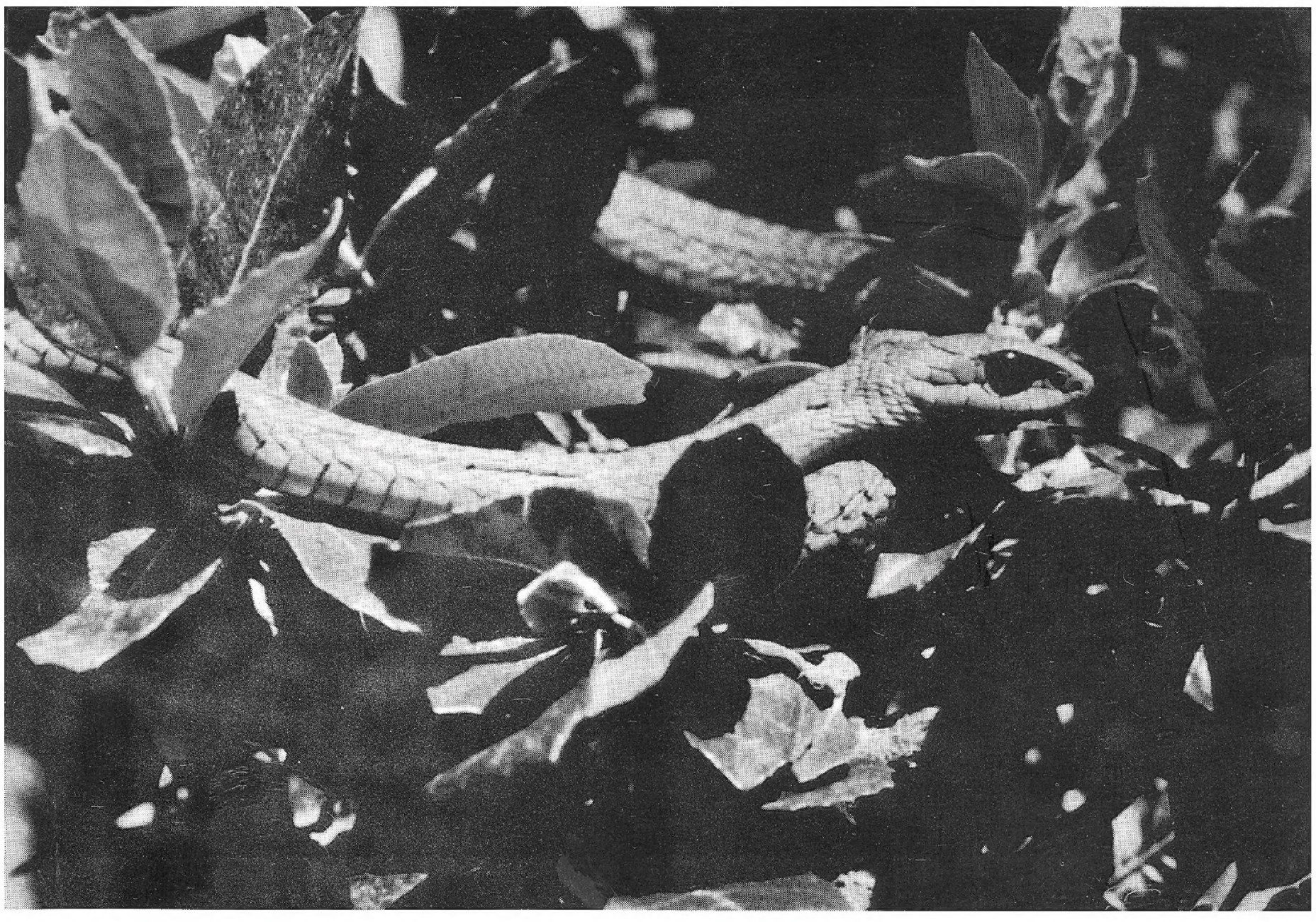

BULLETIN OF THE CHICAGO HERPETOLOGICAL SOCIETY
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Notes on the Husbandry and Reproduction of the Boomslang, *Dispholidus typus typus* (Colubridae)

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Introduction

The boomslang, *Dispholidus t. typus*, is a common arboreal colubrid that occurs in open bush and savanna veld, throughout Africa south of 15°N latitude to the southern tip of the continent. It is, however, absent from drier areas in the south such as the Great Karoo, Little Namaqualand, Great Namaqualand and the Namib Desert. It descends to the ground only rarely, mainly to cross open gaps and to lay its eggs (Broadley, 1983). Spawls (1985) reported an apparent defense behavior—mimicking a branch by lying still on the ground. Currently three subspecies are recognized (Broadley, op. cit.; Welch, 1982), with only the typical subspecies occurring in southern Africa.

The average size of *D. t. typus* is 1.5 m, but it is known to attain lengths of nearly 2 m (Broadley, op. cit.). The diet of this species consists of chameleons and other tree-living lizards, small birds, mice and frogs (Auerbach, 1987). Fitz-Simons (1912) reported that boomslangs feed on caterpillars and other larvae, and that his captive specimens often ate pigeons' eggs. This bizarre behavior has not subsequently been confirmed. Jacobsen (1989) reported an adult from the eastern Transvaal that disgorged three adult grey treefrogs (*Chiromantis xerampelina*). Boomslangs frequently raid birds' nests for eggs and fledglings (Broadley, op. cit.). Ophiophagy has been recorded (Haagner, 1990a; Pitman, 1974), and Fitz-Simons (1912) illustrated a case of cannibalism. The boomslang's predators are mainly raptorial birds, e.g., snake eagles (Steyn, 1982), but include even other reptiles such as the vine snake (Haagner and Clarke, 1993).

Little is known about reproduction in boomslangs. Branch (1988) recorded that mating occurs in spring, and 10–14 (occasionally up to 25) eggs (40 × 20 mm) are laid in summer. Broadley (op. cit.), Zingg (1968) and Trutnau (1981) state that 8–23 (usually 10–14) eggs, 40–43 × 16–26 mm, are laid four months after mating has taken place, and that incubation takes anywhere from four to seven months, with the young averaging about 330 mm in length.

The breeding results summarized below were achieved at the Manyeleti Reptile Centre and the Port Elizabeth Snake Park. The data obtained are compared with those of the Transvaal Snake Park.

Captive Maintenance

The species is relatively hardy in captivity, although wild-caught adult specimens sometimes remain irascible and will often refuse food for long periods. A total of nine adults, four males and five females, were maintained by both institutions for breeding purposes. The snakes were kept in large semi-natural display cage measuring 1.6 × 1 × 1 m. A transparent fiberglass roof allowed the entry of sunlight, providing the animals with a natural photoperiod. The cages contained large potted trees as well as some suspended branches at various levels. A spotlight provided a localized basking spot on one of the suspended branches.

All newly acquired or captured animals underwent a quarantine period before being introduced into the breeding colony. A regular feeding regime for the animals was established at this time. During this period also they were treated for parasites: each snake received prophylactic doses of 160 mg/kg metronidazole (Flagyl) for intestinal protozoa; 2.0 ml/kg fenbendazole (Panacur) for nematodes; and 250 mg niclosamine (Yomesan) for cestodes. During quarantine the thermal regime was maintained at 24–28°C.

Food was offered weekly in the form of 3–4 dead mice, left

Figure 1. Two color phases found in male boomslangs. Photographs by William R. Branch.

in the cage overnight. A vitamin supplement (1:1 mixture Calsup : Beefee Powder – Centaur Labs) was given in the food once a month. The thermal regime in the breeding cages was maintained at a low of 12°C in winter, whilst in summer it sometimes reached 32°C. From the end of April to mid-August the animals were placed on a winter fast and the temperature of the cage was decreased to 18–22°C.

On 12 February 1991, a large (total length = 1550 mm) female boomslang was seen to be in the process of consuming an adult puff adder (*Bitis arietans*) in a large outdoor enclosure. It was not certain that the boomslang had killed the puff adder, but the latter was not writhing during the process and thus was presumed dead. The boomslang gave up after swallowing its meal halfway, unable to cope with the bulky size of the puff adder.

Courtship

During March and April 1987 and 1988, several reports were received at Manyeleti of groups of boomslangs in single trees. When investigated, up to four males were found congregating around a single female, all attempting to court or mate with her. On no occasion was agonistic behavior or male combat observed. On 4 March 1987 a group of one female and three males was observed in a large marula tree (*Sclerocarya caffra*) near the main camp; a female and two males were captured. The snakes were placed in a large holding cage and throughout the next two days both males copulated with the female. The group was maintained in captivity, and produced eggs successfully for a three-year period until 1989, when they were killed by fire. During this period no aggressive or agonistic behavior was ever observed.

Courtship was always initiated by the male moving dorsally over the female. If she was receptive she would remain motionless, often slightly lifting her tail to allow hemipenal penetration. Mating was observed only from suspended branches or trees, with both tails hanging down, slightly intertwined. Upon intromission, the pair might remain in copula for periods exceeding 40 minutes. Throughout this period the pair would normally remain almost completely motionless, except for irregular convulsive spasms from the male. These could be so violent as to throw the male's coils off the female's dorsum, leaving the pair are in contact only at the cloacas. Failure to achieve intromission is often due to the female's reluctance or refusal to lift her tail. Gillingham et al. (1977) showed that intromission in the Mexican milksnake, *Lampropeltis triangulum sinaloae*, can only occur when the female voluntarily opens the cloacal orifice. Haagner and Carpenter (1986) and Haagner (1990b) reported similar behavior in courting forest cobras, *Naja melanoleuca*.

Reproduction

Females were normally removed from the communal cage during late July or early August, and housed in off-display cages measuring 1.0 × 0.5 m containing hide and nest boxes. Each nest box consisted of an opaque plastic container (e.g., a 5-liter ice cream container) half filled with moistened vermiculite and moss. The gravid females became noticeably swollen posteriorly, and refused all food during the latter third of the gestation period. A prepartum shed normally occurred 4–7 days before the eggs were laid, after a gestation period of 159 to 184 days. At the Port Elizabeth Snake Park eggs have been produced between 17 July and 27 August. At Manyeleti, eggs were laid between 10 and 27 September.

On 19 September 1987 a large (955 + 387 = 1432 mm, 196.5 g) female was found dead on the road near Giyani, northeastern Transvaal (2330Bd). She contained 13 eggs, measuring 37.9–39.4 × 17.2–25.3 mm. The total mass of the eggs was 89.2 g, 45.8% of the female's mass. The female and eggs were deposited in the herpetological collection of the Transvaal Museum (TM 66852). In the northern hemisphere, Vozenilek (1971) recorded mating on 27 November, with the female producing 15 eggs on 4 April after a gestation period of 127 days. He also reported a clutch of 22 eggs laid on 14 November from a wild-caught female from Kenya. The mean clutch size for the two collections was 14.5 (11–21). The eggs produced at Port Elizabeth Snake Park were substantially bigger (mean 38.9 mm) than those produced by the Manyeleti females (mean 33.7 mm) (see Table 1). Jacobsen (1989) reported 13 eggs, which measured 29.0–36.0 × 15.0–22.0 mm, from a wild-caught female. On 11 August 1992 an adult female boomslang (total length = 1424 mm) was captured in St George's Strand, Port Elizabeth (3325Dc). She was obviously heavily gravid and was placed in a holding cage with a nest box containing moist vermiculite. On 26 August she was offered a live mouse which she immediately accepted. Unfor-

Table 1. Summary of the pooled reproductive data collected from captive boomslangs, *Dispholidus typus typus*, at the Manyeleti Reptile Centre (MRC), the Port Elizabeth Snake Park (PESP) and the Transvaal Snake Park (TSP).

	MRC	PESP	TSP
Copulation	Mar	Jan–Feb	Dec–Jan
Oviposition	Sep	Jul–Aug	Aug–Sep
Egg measurements			
Length (mm)	33.71	38.90	37.14
Std. deviation (n=)	2.42 (35)	3.78 (25)	7.46 (40)
Width (mm)	22.60	24.21	21.84
Std. deviation (n=)	1.02 (35)	1.18 (25)	2.41 (10)
Mass (g)	8.56	13.60	10.97
Std. deviation (n=)	0.86 (18)	1.52 (14)	4.85 (37)
Gestation period (days)	159–184	—	260–270
Mean clutch size (n=)	16.3 (3)	12.5 (2)	11 (9)
Incubation period (days)	81–93	—	79–88
Hatchling biometrics			
Total length (mm)	335.90	—	338.09
Std. deviation (n=)	20.51 (21)		20.49 (11)
Mass (g)	7.02	—	6.35
Std. deviation (n=)	1.23 (21)		1.18 (11)

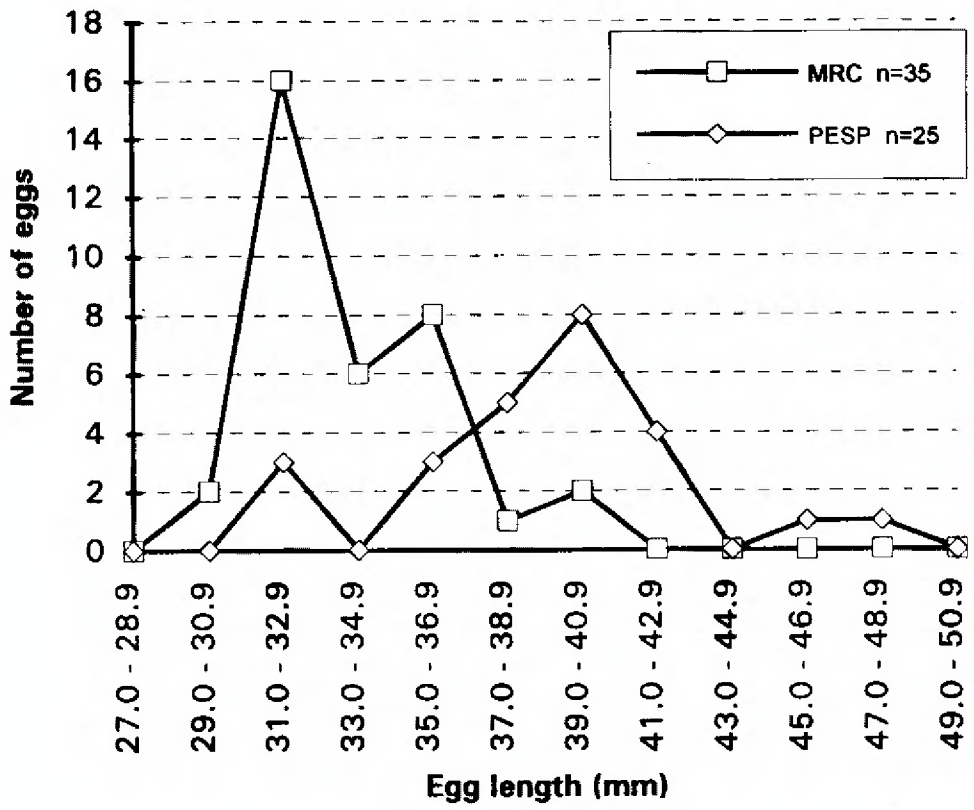

Figure 2. Boomslang egg biometrics.

tunately she was found dead in her cage the following morning. A postmortem indicated that she died of apparent dystocia and contained 11 fully developed eggs in her oviducts, five in the left and six in the right. The egg sizes compare favorably to those recorded by Boycott and Morgan (1990).

The eggs are smooth, white and moderately adherent. Their biometrics are shown in Table 1 and Figure 2. Egg volume was calculated with the formula for ellipsoidal eggs as determined by Douglas (1990). The eggs were incubated at 28°C in a substrate of moistened vermiculite in a clear, sealable container (see Tryon, 1975). The container was opened twice weekly for inspection and to allow for air circulation. Any infertile or fungus-covered eggs were discarded. Incubation periods under these conditions varied from 80 to 93 days (n = 6). Hatchlings normally do not fully emerge from the egg until 24–36 hours after the initial slit in the egg appears. Vozenilek (1971) reported a wild-caught female from the Johannesburg area produced 15 viable and three infertile ova on 9 October. These hatched on 15 January, after an incubation period of 98 days.

Hatchling Maintenance

The young were weighed and measured upon emergence (see Figure 3) and individually housed in transparent plastic boxes, each of which was furnished with a tissue substrate, water bowl and hide box. Differences in hatchling biometrics were smaller than those for eggs from the two populations. Young produced at the Transvaal Snake Park were fractionally bigger (mean 338.1 mm) than those produced by the Manyeleti females (mean 335.9 mm) (see Table 1). Broadley (op. cit.) reported that hatchlings measure 330 mm on average.

All hatchlings were alert and the first slough normally occurred after 7–15 days. Only then was food offered, in the form of newborn mice. A thermal regime of about 28°C was maintained with an associated photoperiod of 12/12 light/dark. Hatchling boomslangs are notorious as reluctant feeders. Of 21 young monitored over a four-year period, only 23.8% (five snakes) voluntarily accepted live pink mice. Problem feeders were force-fed until spontaneous acceptance occurred. Due to the high stress levels associated with force feeding, the majority of the hatchlings were released back into the wild. Trutnau (1981) reported that baby boomslangs often refuse food and need to be force-fed but soon start eating small mice on their own.

Young hatched at the Snake Park of the National Zoo in Pretoria eagerly took young frogs (Nel, pers. com.). Growth under optimum conditions and high thermal regime is rapid and a length of approximately 800 mm can be attained after the first 12 months. The first successful breeding in a captive-bred female has occurred at 31 months of age, when she had a total length of 1383 mm.

Discussion

The behavior patterns observed in courtship and copulatory behavior are very similar to those observed in other arboreal snakes, e.g., green mambas, *Dendroaspis angusticeps*,

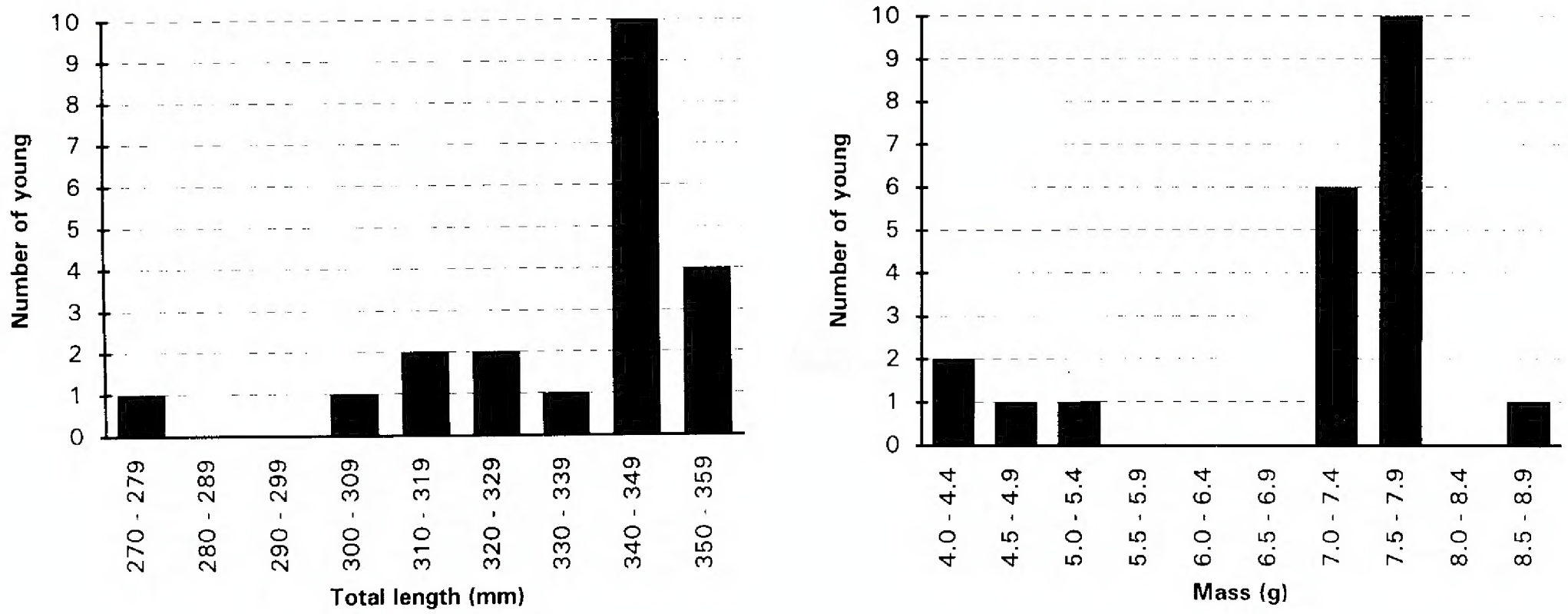

Figure 3. Boomslang hatchling biometrics, based on data from captive breedings at the Manyeleti Reptile Centre.

(Haagner and Morgan, 1989). The boomslang appears to be unusual in congregating in large numbers. Boycott and Morgan (op. cit.) reported that "large breeding aggregations are formed," whilst Isemonger (1982) reported that John Wood collected 26 snakes in the space of an hour. No mention is made on the sex ratio of these or the time of year collected. There appears to be no evidence to substantiate that these congregations are linked to reproductive activity. Wood (in Isemonger, 1982) does mention that it was bitterly cold, and just after a rainy night. The farmer reported "the snakes congregating in mating bunches." This activity appears to be restricted to the western Cape only, although small groups of up to five animals have been observed during March and April in the eastern Transvaal. The latter congregations were definitely involved with reproductive activity.

Gestation periods calculated from the above captive breedings varied from 159 to 181 days, which is substantially shorter than the 260–270 days reported by Boycott and Morgan (op. cit.). Variation in calculated gestation periods might be the result of extended periods of observed precopulatory behavior or repeated matings. Boycott and Morgan (op. cit.) do acknowledge that one accurately observed mating produced eggs after 176 days. Rose (1962) reported on a female boomslang captured on Table Mountain that produced a clutch of eggs four months after capture, indicating a gestation of at least 120 days. During this period she fasted, but readily took frogs after oviposition. The dates of oviposition and hatching differ from those recorded by FitzSimons (1962) and Broadley (op. cit.), who state that the eggs are laid in late spring to midsummer and take four to seven months to hatch.

Although the difference in egg sizes between the two populations are clear in Figure 2, this could be a product of environmental and/or physical factors. Visser (1971) recorded two "unusually large" spotted grass snake (*Psammophylax r. rhombeatus*) eggs, but calculated volumes indicate that these eggs were actually 15.3–17.8% smaller than the average eggs reported by FitzSimons (1962). The Mann–Whitney U test (see Zar, 1984) showed that the eggs produced by the Port Elizabeth Snake Park were significantly bigger in volume than those from Manyeleti ($P < 0.0001$). Unfortunately no measurements were taken of the females involved. Differences in egg size may be related to female size as has been shown for brown house snakes, *Lamprophis fuliginosus* (Haagner, 1987). Boycott and Morgan (op. cit.) noted a difference in egg size between wild-caught and captive specimens. They also noted greater hatching success from wild-caught snakes. They attributed these differences to possible captive conditions such as diet or microclimate. Another possibility is that there is geographical variation in the size of eggs and hatchlings.

General recommendations for the successful captive breeding of this species are listed below:

1). As it is an arboreal species, it is necessary to provide ample space, and if possible, to maintain a group rather than solitary pairs or individuals.

2). Ensure a definite drop in winter temperature together with an associated decrease in day length.

3). Limit potential disturbance during the mating season to the absolute minimum.

4). Remove gravid females from the communal cage to ensure the timely collection of eggs.

5). Keep the female warm during the latter half of the gestation period, but avoid extremes that might cause premature laying.

6). Incubate eggs at 27–30°C, at a relative humidity of 80–100%.

7). Offer hatchlings a wide variety of natural prey before resorting to force feeding. Wean onto mice as soon as possible.

The boomslang is a hardy and rewarding captive, but due to its venomous nature, it is not recommended for the amateur.

Acknowledgements

Mr. Dave Morgan supplied unpublished reproductive data from the Transvaal Snake Park. Dr. W. R. Branch commented on the text.

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Searching Out Central Indiana Plethodontids

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On 12 October 1993 the authors went on an excursion to observe the native Indiana salamanders of the family Plethodontidae. We journeyed to Montgomery and Park counties, where we hoped to observe all four plethodontid salamander species native to that area.

Members of the family Plethodontidae are called lungless salamanders. As the name suggests, these salamanders do not possess lungs; rather, they are able to extract oxygen through capillaries in their skin. They all use internal fertilization in which, after a brief courtship, the male deposits a spermatophore that the female then picks up with her cloacal opening. All four species observed are known to guard the fertilized egg masses.

At 5:00 A.M. we piled into the car, armed with a pocket tape recorder and a 35 mm camera with assorted lenses. We hadn't gone two miles before we were apprehended by one of Cedar Lake's finest for an apparent illegal right turn on red. After a brief conversation, the officer wished us luck and sent us on our way with a warning.

Our spirits remained high as this was to be the last herp trip of the year. After a pleasant two-hour drive we found ourselves surrounded on both sides of the road with the prime habitat we had come to observe. We found a place to pull the car over and were startled by the brisk temperatures, which were in the high 40s to low 50s Fahrenheit. It appeared to be perfect *Plethodon* weather. We began our hike through a forested hillside where we turned a few logs, making sure to place them back in their original position. However, this yielded nothing of interest as it appeared to be a bit too dry. We decided to head down to the ravines where we knew the conditions would be more favorable.

Down in the ravines there were shallow running streams with an abundance of flat limestone rocks scattered throughout the stream as well as along the water's edge. Our first salamander was encountered here—a two-lined salamander (*Eurycea bislineata rivicola*). This is a salamander with yellowish ground color speckled with black. Two dark lines running along its sides give this salamander its common name.

Of the four species of salamanders we encountered on this trip, this one requires the most moisture. Its courtship occurs on land, but it deposits the eggs on flat rocks in the water. We found four or five examples of its larvae, which spend at least a year in the aquatic form.

Not more than two steps away we uncovered our second species of salamander, the red-backed salamander (*Plethodon cinereus cinereus*). This salamander is generally found in drier conditions then the previously mentioned *Eurycea* species, in keeping with its woodland habitat. *Plethodon cinereus* appears to be a generalist as far as lungless salamanders go, in that it does not seem to have the strict, specialized habitat requirements of other plethodontids and it can be found in significant numbers quite some distance from the water. The red-backed salamander appears in two well defined color phases: the red-backed phase and the dark or lead-backed phase. The two names make sense when one actually sees these two distinct varieties. The lead-backed variety has a dull blue-gray streak on its back while the red-backed has a wide bright red stripe down its back. An interesting note: we found almost exclusively the red-backed morph in Montogomery County, whereas in Park County we encountered almost exclusively the lead-backed variety. *Plethodon cinereus* deposits eggs on land in rotten logs and similar debris; the neonates hatch out and live a terrestrial existence. We encountered a number of neonates under sections of bark and they were small. The ones we found averaged about 2 mm and since it was October we assumed they probably had put some size on by then.

The zigzag salamander (*Plethodon dorsalis dorsalis*) was the next salamander found and was probably the salamander encountered most frequently on this excursion. This interested us because on past trips this species appeared to be less common. This is something the authors intend to keep an eye on.

Plethodon dorsalis is usually a yellowish to brown salamander with a wavy dark stripe down its back. This salamander seemed to be found among rocks, and when disturbed would try to find a crevice in which to hide. We also encountered neonates of this species. They appeared to be about the same size as the young of *Plethodon cinereus*. In fact, on more than one occasion we found neonates of the two species sharing the same hiding place.

The last salamander we encountered on the trip was the slimy salamander (*Plethodon glutinosus glutinosus*). This is a beautiful salamander, speckled all over with white on a dark black ground color. For those of you who have never picked up *Plethodon glutinosus*, they have a sticky skin secretion like rubber cement that gets all over your hands and is difficult to remove.

Of the four salamander species we encountered, *Plethodon glutinosus* achieves the greatest size. We found only two specimens from the four stops in two counties that we made, which disappointed us. However the specimens we did find were beautiful and appeared robust.

Something the authors feel strongly about and would like to express is the importance of leaving habitat in as good condition, if not better, than one finds it. Nothing is more frustrating than going to make a field observation and finding rocks and logs moved from their original positions, thus altering or destroying the animals' habitat. We need to be responsible and make the extra effort to replace all objects we move while searching out herps.

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Book Review: *And No Birds Sing* by Mark Jaffe

283 pp. 1994. Simon & Schuster, New York. ISBN 0-671-75107-7. $23

[Available from the CHS Mail Order Service]

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Can a 268-page book about snakes eating birds be so compelling that it can be read at a single sitting? That's the case with Mark Jaffe's tale of the near-total destruction of birds on the 28-mile-long island of Guam 3,000 miles west of Hawaii in the North Pacific Ocean. Dr. Edward O. Wilson of Harvard University describes *And No Birds Sing* as a "horror story about a biodiversity serial killer." To a herpetologist, the brown tree snake reveals remarkable adaptation, revolutionizing theories about snake behavior and specialization.

Jaffe untangles the complex web of the investigation of how an estimated 300,000 resident birds on Guam were virtually annihilated in only 40 years. Of five endemic species (that is, found nowhere else in the world) three are now extinct (rufous fantails, bridled white-eyes, Guam broadbills) and two (Micronesian kingfishers, Guam rails) survive only thanks to captive propagation in zoos such as the Lincoln Park Zoo. Jaffe weaves in lessons about closed-mindedness in the scientific community, the snail's-pace of government bureaucracy, the dangers of introduced species throughout the world, and the importance of islands in teaching lessons of species evolution, extinction, and now, with a glint of hope, restoration.

Julie Savidge, the key protagonist, stakes her doctorate degree from the University of Illinois on the real-life question of which of Dr. Wilson's "four horsemen of environmental apocalypse:" disease, predators, habitat destruction, or hunting, was guilty in Guam. Her experiences might be summarized in a comment precipitated by the deaths during transport to Guam of 121 expensive pathogen-free quails and chicken for a disease test—"A day without a crisis just isn't a day worth getting up for."

Savidge stepped outside traditional scientific censuses and experimentation to interview native residents, scour news files to document noted appearances of brown tree snakes, and analyse data on power outages caused by the snakes. In 1984 other scientists greeted her snake hypothesis with incredulity and hostility. Slow-moving snakes with a low metabolism that may eat a simgle meal in a month just weren't associated with the kinds of ecological destruction caused by active, hungry mammals.

But meet *Boiga irregularis*, a thin, secretive, rear-fanged colubrid that can reach 11 feet in length. Savidge found the brown tree snake as at home in holes in the ground, rocky cliffs, the grass of savannahs, and drainage pipes in cities as in treetops. They can move by throwing loops of the body one way and then the other, clamping them around even thin branches. This locomotion, termed "stenegryous undulation," allows rapid passage even vertically over rough surfaces. It also allows snakes to travel between power lines, killing themselves and causing power outages. These prove costly: one destroyed $20,000 in equipment; another caused $250,000 damage to a main generating facility.

Savidge and Tom Fritts of the Fish and Wildlife Service concluded that the brown tree snake is successful at colonizing not because it is an efficient specialist but because it is an unprecedented generalist. Besides killing birds of all sizes, habitats, and habits, it consumed bats, mice, rats, skinks, anoles, and geckos. It even was observed to take hamburger balls, spare-ribs, dog food, and barbecued chicken.

The brown tree snake can eat enormous items, up to 61.7% of its own body weight, by changing head shape from oval to triangular. Jaffe quotes John Groves as saying: "the largest prey engulfed by nonvipers was 18.4% of snake's mass. Vipers swallowed rodents up to 36.4% of mass and failed to swallow rodents 40% or more." However, this is inconsistent with other figures, such as those given in *Dining with the Snakes* by Jared Diamond in *Discover* Magazine, April 1994.

A review of this work by Bowie Calderone in *Notes from NOAH* XXII(1) 1994 quotes "Many snake species regularly consume 25% of their unfed body weight. Pythons can easily eat 65% of their weight and sometimes up to 96%. The record is held by a viper that swallowed a lizard 1.6 times its own weight." Such a large discrepancy indicates that more careful research would have benefited Jaffe's book.

Nevertheless, the story is dramatic. Brown tree snakes have been known to try to eat fresh-laid eggs, newborn puppies . . . and human babies in cribs. In recent years, more than 12 babies were attacked in their cribs. Chewed fingers indicate that these were feeding bites. Although no infants yet have died, several have stopped breathing for a time, undergoing respiratory arrest accompanied by a vast increase in heart rates.

David Chiszar of the University of Colorado, an expert on ophidian sensory cues, learned that excrement and skin of animals, chemicals ordinarily encountered by foraging predators, did not stimulate brown tree snakes. Instead, to his amazement, Dr. Chiszar found that blood, from any animal, male or female, induced repeated strikes. An attraction to blood is highly unusual for snakes in the evolutionary sense because snakes rarely tear or dismember their prey or follow blood trails.

Hoping to explain attacks on human infants, Dr. Chiszar presented a captive brown tree snake with a human placenta, which was immediately swallowed. Then he offered blood-soiled versus water-soaked sanitary napkins—again the snakes swallowed the bloody items. He theorized that menstruating women and new mothers still bleeding from childbirth might attract brown tree snakes into their homes. Once there, snakes identify babies as the most likely targets. Recent analysis shows similarities between brown tree snake venom and cobra venom. Though not as potent, great amounts are present in large specimens.

Brown tree snakes were first recorded in Guam in 1958. Within three decades bird life had virtually disappeared. John Groves, curator of reptiles at the Philadelphia Zoo, estimated in 1984 there were one to two million snakes on the island, the greatest density of snakes anywhere in the world (perhaps 30 per acre). The brown tree snake proves that a reptile can adapt its behavior and prey choice and pose as much danger to an ecosystem as a mammal.

The brown tree snake has begun appearing in other places, transported by military planes and ships. It was spotted in Hawaii in 1981. By 1992 Congressman Daniel Akaka of Hawaii warned that "the brown tree snake poses a severe health and environmental threat to Hawaii." Section 1209 of the Zebra Mussel Law, p. 260, designated the brown tree snake an "injurious species" and established a task force to draw up a control plan. *And No Birds Sing* warns against other invasions of alien species (described by one biologist as "living pollution") around the world. "Guam's woes are symbolic of problems that beset many lands and the lessons learned may eventually aid in saving and restoring other wildlife and wild places." Learning from the past is the bright light of hope of this book and the environmental catastrophe of Guam.

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HerPET-POURRI

by Ellin Beltz

Accidental tourists?

- Postal workers in Rio de Janeiro, Brazil, were astonished to find a 5-foot boa constrictor, which had slid out of a package that had been in transit 17 days with their agency. It seems "Clotilde" belongs to an army sergeant who was transferred from one post to another over 2,500 miles away. His buddies slipped the snake into a box while they were "helping" him pack. The recipient was quoted as saying, "It was a real bad joke." [*Chicago Tribune*, January 6, 1995]

- U.S. Customs inspectors removed 14 baby boas from a 20-year-old's luggage at Miami International Airport. The boas, which ranged from 1½ to 2½ feet in length, were in cloth bags hidden in the legs of a pair of pants. Also found were 300 poison-arrow frogs in three horse shampoo bottles, and 200 baby tarantulas in bags. The man was charged with a violation of the federal Endangered Species Act and faces up to 5 years in jail and $250,000 in fines if convicted. The smuggler said he was paid less than $100 to bring the animals across the border, according to Assistant U.S. Attorney Lauren Priegues. [*Chicago Tribune*, January 1, 1994, from Ray Boldt and Claus Sutor; Akron, OH *Beacon Journal*, from Jim Zimmerman]

- *The New York Times Magazine* [November 13, 1994] cover story is titled "Invasion of the Nature Snatchers, Will the brown tree snake, having infested Guam, ravage Hawaii? How alien species are flattening the world." Written by Alan Burdick, the article (which is a long one) deals with the various "super-tramp" species that are traveling along with humans around the world. Readers are encouraged to see this article at their local public or university libraries since it is impossible to do it justice in a paragraph. The cover photo is of the infamous brown tree snake (*Boiga irregularis*).

Snakes, the final frontier...

- CHS member Mike Zelenski was featured in a colorful cover story of the November 28, 1994, Racine, WI *Journal Times*. "People [who are afraid of snakes] . . . would be well-advised to buck up their courage a bit before visiting Mike Zelenski's home. He and his sons, Bill, 18, and Paul, 16, have a hobby many people would find both mesmerizing and

repellent. They collect, trade, raise and breed snakes . . . don't stick your hand into any aquariums. . . ." wrote Michael Burke. The article talks about how the animals are fed and housed, bred and shown at schools and other educational venues. All in all a very positive piece after the first few negative remarks! Good media work, Mike!

• J. N. Stuart sent in a couple of articles about Bob Myers and the Albuquerque International Rattlesnake Museum in Old Town Albuquerque, New Mexico. Stuart wrote: "This is the kind of `grass roots' program that local herp societies could get involved in. And it's practical." What Bob Myers is doing is teaching local people how to handle snakes safely with a snake stick. Apparently there's so many rattlesnakes around the Sandia National Laboratory that workers wanted to learn how to deal with them (other than the time-honored technique of beheading). Bob's trainees were so happy with the course they "sponsored" a rattlesnake at the museum. [Sandia Lab *News,* August 19, 1994] The other article points out that human/rattlesnake interactions are increasing as human habitat expands into areas which were formerly wild. In 1993 the New Mexico Poison Center recorded 27 rattlesnake bites with no mortalities. [Albuquerque *Journal*, August 31, 1994]

• A new anti-clotting agent for human blood has been developed from the venom of a Malayan pit viper. This drug is superior to others currently available since it does not increase the risk of major bleeding complications as do the others. [The Richmond *Times Dispatch*, September 24, 1994, from Mr. Laverne A. Copeland]

• "Seven times the taipan struck, shooting murderous doses of poison into its victim's bloodstream" wrote Jim Hutchison in an article titled "Snake Attack" in the December 1994 *Reader's Digest*. I don't know about the *Reader's Digest* stylebook, but my dictionary defines murder as "the unlawful killing of a human being . . . " or "to kill or slaughter inhumanly or barbarously . . . " and poison is when you eat it not when it's trying to eat you. Contributor Mark Witwer wrote: "It's a bit sensational. . . . I especially like the part about a 6-foot snake striking and knocking a 160-pound man off his feet. I don't think so. Note that the man was 'frantically' trying to jump out of the way. I might have been, too! And that had more to do with falling than the force of impact of the strike, I'll warrant. Also, note the first aid—a compression bandage. I've read about this in Australia." P.S. The victim survived.

• A Country Club Hills police sergeant has become the de facto "snake wrangler" for several south suburban Chicago area police departments according to the *Daily Southtown* [Midlothian, IL December 11, 1994, from Steven Ragsdale]. Sgt. Peter Comanda has loved snakes since he was 7 years old, even though his mother and his wife disapprove. The article says he has three kingsnakes he caught on a recent snake-hunting trip to southern Illinois. His most recent capture was a 6-foot boa that was loose in a house. He said, "After a while you can start thinking like them and you know where they'd like to go. I found it in about 20 minutes under the kick plates on the kitchen counter."

• A 12-year-old boy was hospitalized after being struck by a freight train while he was looking for snakes on the tracks near Batavia, New York. [*The New York Times*, November 13, 1994, from Steven Ragsdale]

• The Orlando *Sentinel* [November 27, 1994, from Bill Burnett] had a feature about unusual pets kept in businesses including "Stanleyetta," an 8-foot, 250-pound python that roams free in an export company's office. "Humorous" incidents reported in the article include the time that Stanleyetta got loose and went for a swim in a nearby lake. She was AWOL for several days and was found in a truck parked at a neighboring gas station. They also use her to play practical "jokes" on neighbors; stuffing the snake in the car to flip out passersby, putting her in other people's offices, taking her hunting in the back of a pickup truck. What a sense of humor these guys have, huh?

• A 13-year-old Baton Rouge boy was bitten by a 3-foot snake when he stuck his hand into his aunt's goldfish pond to clean it out. He was released from the hospital after two days of treatment; the first few hours, he was in intensive care. [Baton-Rouge, LA *Advocate,* July 31, 1994, from Ernie Liner]

• A venomous snake on the 16th hole at the Nashua, South Africa, Wild Coast Challenge Golf Course may have cost U.S. Open champion Ernie Els his chance of winning the tournament. An encounter with a 3-foot night adder just off the tee may have lead to Els shooting (or whatever it is they do in golf) his ball into a water trap. He said, "The snake shook me up, but it's no excuse. This is Africa. . . ." [*Chicago Tribune*, November 29, from Steve Ragsdale, and Reuters wire, November 28, 1994, from Allen Salzberg via Internet]

• A hunter in Valentine, Louisiana, was out hunting rabbits and shot another who was doing the same. Unfortunately, the other hunter was an 11-foot, 9-inch (looks like a python to me) snake which was loose near some railroad tracks. The man had a hard time convincing deputies and dispatchers at the parish Sheriff's Office that he had killed a snake nearly 12 feet long. He said, "They kept telling me that snakes don't get that big around here. . . . Nobody has ever seen a snake like that around here." The hunter hung the snake in an oak tree in his front yard for people to see as they drove by. He said a few stopped for a look, but that some wouldn't get out of their cars. He said, "Everybody told me, 'You should have caught it. . . .' Yea, how you gonna catch something that big? And I'm deathly scared of snakes." [Houma, LA *Courier*, November 29, 1994, from Ernie Liner]

• Whit Gibbons, a senior researcher at the Savannah River Ecology Lab, regularly publishes a newspaper column that is carried by several southern papers including the Leesburg, FL *Daily Commercial*. In his September 11, 1994, column, Whit muses on the theme "Support for snakes gauge [sic] public's animal attitude." He wrote: "Educated people appreciate the key environmental role herpetofauna play as critical links in the food chain in which all organisms are a part. The environmentally informed realize that these animals are as important to natural ecosystems as those species perceived as directly useful to humans. And most view intentional destruction of these animals as inexcusable. . . . Today's greatest threat to

most herpetofauna, indeed to all wildlife, is habitat destruction. Wetlands degradation, destructive lumbering, atmospheric and stream pollution and the overuse and abuse of herbicides and pesticides continue to threaten the existence of countless wildlife species." [from Bill Burnett]

• Erle G. Kauffman, a visiting professor of geology at Pennsylvania State University told the December meeting of the American Geophysical Union, "We can see from the fossil record that we are in an early and highly accelerated stage of a biodiversity crisis and we will shortly reach mass extinction levels. If this extinction behaves like others in the geological record, we won't experience ecosystem recovery for one to 10 million years, especially in the tropics." [*Chicago Tribune*, January 1, 1995, from Claus Sutor]

Close encounters of the commercial kind

Snake hunting and snake hunters were featured in a bunch of articles recently, climaxing in the *Time* magazine August 22, 1994, piece "Killing Fields" mentioned below and in a previous column. Ernie Liner sent in a delightful article that describes the sunrise search for snakes in abandoned lots in the eastern part of town. Christopher Rose wrote: "The hunters pick through the debris left by dozens of unscrupulous businesses—small-time tire dealers, carpenters, roofers and carpet installers who have found no better place to unload old shingles, radials and remnants. Born of this melange is a massive population of snakes, many of them deadly, though the hunters seek less menacing breeds that can be captured and sold in America's pet stores. It's just another way of putting Louisiana on the map. We got some snakes, cher. . . . Joe Road looks like the set of a Mad Max movie, some sort of bad future place. . . . Joe Road is snake city. . . . [The hunters] are snake cowboys on a reptile rodeo. . . . The rattler [they found] seems perplexed. . . . It was only trying to catch a few Z's and duck the heat of the day. It slithers away. . . . [The hunters] get three bucks a foot for king snakes, $2.50 for a garter and so on. On slow days they'll grab loose skinks and geckos that they sell as snake food for about 25 cents a pop. . . . Turning a corner . . . [one hunter] lets loose another string of epithets at the sight of freshly cleared woods. Here in front of us, he says, was once a beautiful stretch of hunting grounds, full of old sofas and refrigerator boxes. But a city earthmover is parked here now and all the trash is gone." All in all this piece is one of the best-written newspaper feature stories it has ever been my pleasure to read. Your local library can order you up a copy. It was the cover story on the Living Section, New Orleans *Times-Picayune*, August 21, 1994. The Austin *American-Statesman* paper ran a three-part article on the hunting of grey-banded kingsnakes and other ophidians in Texas [June 13–15, from the patient Bill Montgomery]. Apparently, snake hunters who were featured in these articles got some heat from regulatory agencies. Galon LeCoy Holmes reports in the AFH *Vivarium* [6:4 from AFH] "on the legislative front: Nightmare in Texas." He describes a recent National Park Service sting operation, named "Operation Rockcut," that was intended to stop what the NPS called a "multimillion dollar snake poaching ring" that was taking snakes in and around the Big Bend National Park and on National Park land in Arizona. Holmes writes: "An investigation was initiated by AFH Legislative Representatives and it became apparent early on that the story, as published by *Time* magazine, was less than accurate. It should be noted that the article was based on the news release from the NPS." Holmes states that the so-called "kingpin" of the "multimillion dollar poaching ring" who was carrying a gun and who "gave up without a fight" (all quotes from *Time*) was really an occasional snake hunter with no previous police record who works in a restaurant. He was jailed on some misdemeanors which are not considered jailable offenses in the state of Texas, and a well-known herpetologist was mailed a citation months after being stopped with only cameras in his car inside the National Park. Holmes asks that people interested in being his eyes and ears around the world contact him in care of the AFH, P.O. Box 3000067 Escondido, CA 92030-0067, or by calling (619) 747-6289.

We asked, they answered

The most recent *Herpetological Review* (24:4, 1994) contains an article titled "Rotenone Hazards to Amphibians and Reptiles" by Lance W. Fontenot, Gayle P. Noblet and Steven G. Platt from Clemson University in South Carolina. They reviewed the literature, described the chemical and previous fish studies, then discussed previous work with herps. In a nutshell, adult frogs are less sensitive to rotenone than are larvae although at least one study remarked on "considerable nontarget amphibian mortality if an effective fish kill occurs." They suggest that *Amphiuma* and *Siren*, both salamanders, and *Apalone* —the softshell turtle—"may be susceptible to rotenone." Apparently only ten actual studies have been performed. The oldest is from 1931; the most recent was in 1987, but was on *Xenopus laevis* as opposed to any native species. I highly recommend this article to agencies, consultants, researchers and citizens interested in the toxic effects of this widely-used piscicide.

What a lot of research!

CHS member (and turtle-lover) Allen Salzberg recently sent me a draft copy of his "Preliminary report: Live freshwater turtle and tortoise trade in the United States" to be published by the Humane Society of the United States and the Humane Society International. The chapter headings include: Turtles as pets, the size of the market, where do they come from (wild, ranched, bred, farmed), how many turtles are traded and how reliable are these numbers, the treatment of turtles in trade, turtle survival rates in captivity, human health and conservation implications, a summary of the laws governing the humane treatment of turtles and a discussion of whether the laws work, and a conclusion with suggestions. References and an appendix are provided. The 39-page report is single-spaced, double-sided and not a quick read. But it is the most informative and fact-oriented piece I have ever read on the entire turtle and tortoise issue. You can get your name on the list for a final copy (I think), and comment on your own experiences in the turtle and tortoise world by contacting Allen in care of the New York Turtle and Tortoise Society, 163 Amsterdam Avenue, Suite 365, New York, NY 10023 (send a self-addressed, stamped #10 envelope), or via Internet at Asalzberg@aol.com.

Thanks to everyone who contributed to this column! And thanks to Marty Marcus for his 1995 herp calendar featuring art by children at the Sybil N. Crookham School in Winton, California. You can contribute, too! Simply send articles with date/publication slug and your name firmly attached (with tape, not staples) to: Ellin Beltz, 1647 N. Clybourn Avenue, Chicago, IL 60614-5507. Photocopies or whole pages are preferred to origami-style or stapled clippings!

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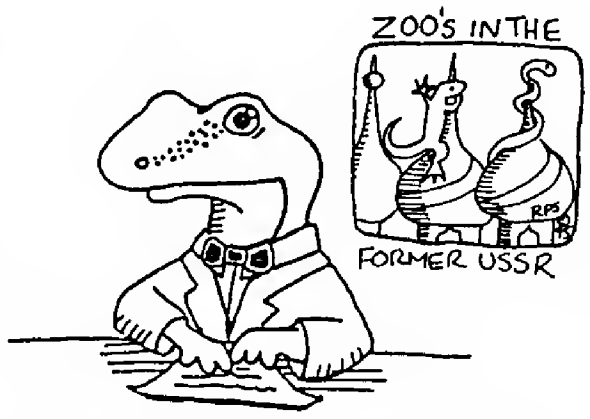
NEWTLINE

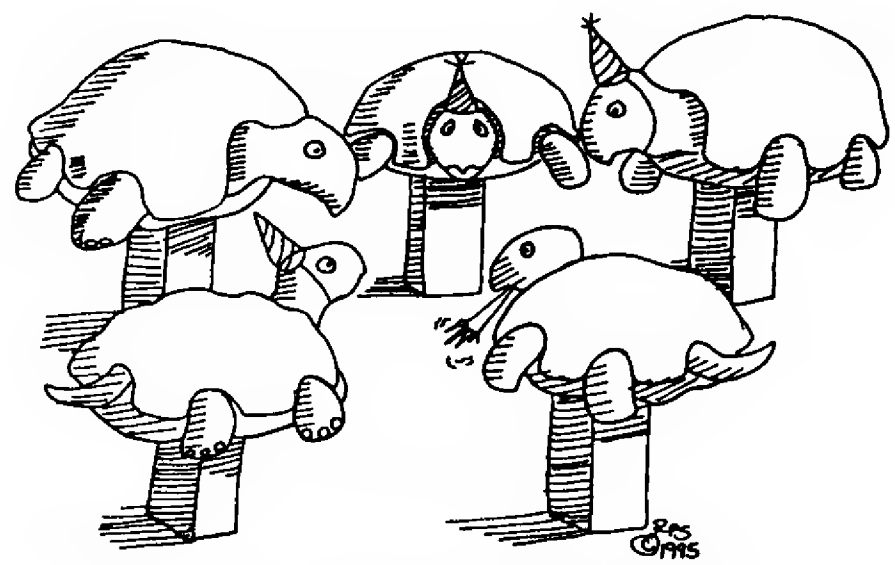


Between holiday activities, and basking under the unseasonably warm temperatures, dedicated members and guests of the CHS gathered for the last meeting of 1994 on December 28 in the Field Museum's A. Montgomery Ward Lecture Hall. President **Marcia Rybak** welcomed the crowd by introducing Membership Secretary **Steve Spitzer**, who explained the details involved in joining the Society and announced that current membership is 1,815. Substituting for **Ron Humbert**, Steve reported on the continuing saga of the confiscated Horsfield's tortoises, explaining that the "bureaucrats would be making a decision sometime on or before January 27." Librarian **Lisa Koester** introduced her successors, **Jenny Puchola** and assistant **Renee Gralewski**, and suggested we check out the 308 items available on the library cart. Thanks to Jenny and Renee the library will not be "put out to pasture" or liquidated. In addition, Lisa reminded us the Turtle Club meets each month on the Sunday before the CHS meeting. Merchandiser **Joan Moore** welcomed us to browse through the selection of new books. **Anthony Rattin** introduced **Chris Lechowitz**. Chris will be taking over as head of the Legislative Committee. Currently, the committee has only two members and is looking for volunteers.

After a 30-minute break, we returned for a quick raffle. Program Chairperson Anthony Rattin thanked the Society "for the honor and pleasure of serving as Program Chairperson during the past year." He introduced us to **Ray Pawley**, Curator of Herpetology at Brookfield Zoo. Ray thanked us on behalf of Ed Lewis for our contributions to the DNA project on remaining populations of tortoises in the Galapagos Islands. All monies received went solely for obtaining blood and tissue samples. The project proved successful and continued research on bloodlines is expected if funds hold out. For further information, he recommended we pick up a copy of the article, "Galapagos: The Good, the Bad & the Ugly" in the Marine Conservation Journal, *Ocean Realm*.

Radically, the topic changed to the subject of sea cucumbers. Ray is opposed to a total ban on the export of sea cucumbers from Ecuador to Japan. He believes the controversial ban is "short-sighted" and, from a conservation standpoint, could have a devastating effect on the economic resources of this developing country.

It was then on to the slide presentation. We were taken on a visual exploration of herpetological collections in the former Soviet Union, (sometimes referred to as, "The Commonwealth of Independent States"). We began in Moscow with a shot of St. Basil's, followed by a visit to the outdoor "Bird Market," a vacant lot on two acres of land where private parties sell or swap a variety of creatures, including dogs, cats, chickens, tropical fish, snakes, green tree frogs, and tortoises. Perhaps the most startling photo was of several stranded juvenile Horsfield's tortoises displayed on a table. Each had a tall wooden block located under its midsection, presumably to prevent it from fleeing. This outdoor form of free economic enterprise dates back to the early 1800s.



Former Soviet Union Bloc Party

Slides of the Moscow Zoo Reptile House and Terrarium were shown. The moderately-sized two-story structure houses its animals on the first level and reserves the second level strictly for breeding. The Aquarium in the zoo is not open to the public, but is instead used exclusively for breeding. However, a small area in the Reptile House remains open for public viewing. It provides maximum room for reptiles, but leaves narrow corridors for visitors. Also in Moscow is the famous Moscow Circus. The Circus works closely with zookeepers on breeding programs. In St. Petersburg (or Leningrad), the zoo, one-third the size of our Brookfield Zoo, was used as a holding facility before the turn of the century. One of its main reptilian attractions is the Levantine viper. In Estonia, now an independent republic, the Talinn Zoo is located in a previously abandoned military barracks. It houses a large collection of amphibians along with Chinese alligators and a Cuban crocodile. Construction of a new zoo is in the

works. Built in 1912, the Riga Zoo in Latvia has two reptile houses. The buildings are heated by hot water. A double layer of glass protects the reptile habitat and a double layer of glass insulates the exterior of the building. Above is a glass roof. Built-in screens allow for ventilation. Enclosures are built with treated hardwood panels and descriptions are displayed in both Latvian and Russian. A 70-year-old American alligator is among its tenants. The zoo has only one keeper.

Zoos in the former Soviet Union are limited in available resources. Fiberglass and concrete are rarely available and are quite expensive. Wood is available in limited quantities. Fortunately, glass is plentiful and allows for viewing into the habitat. Enclosures are typically constructed from polystyrene, an inexpensive foam-like material. This poor synthetic substance is able to withstand the pressure of a small reptile, but not a keeper.

The former USSR maintains a close working relationship among its museums, zoo parks, circus and Academy of Sciences. Obtaining adequate funding is a major problem for all of these institutions. They have developed a network system whereby they barter and collectively trade animals to supplement feeding costs. The zoos receive government funding by providing evidence of successful breeding. This can lead to overpopulation and a surplus of certain species. Ray believes that until another basis for funding becomes available, these zoos will continue with this method of survival.

Individual privatization is permitted provided that the animals are well maintained and that any rubles, grants or admission fees are spent solely on the care of the animals. Before thinking about a career as a keeper in the former Soviet Union one must consider extremely low wages, long hours, few assistants and a high accident rate. An estimated 60% of a keeper's time is spent keeping the collection fed.

We stay in touch, so you stay in touch.

Respectfully yours,

NEWT

Bull. Chicago Herp. Soc. 30(2):32, 1995

Helpful Herp Hints

by Dennis Engler

I can hardly believe that this is the start of the third year for this column. I want to again thank everyone who has contributed and encourage you to keep sending in those hints and ideas that have helped you.

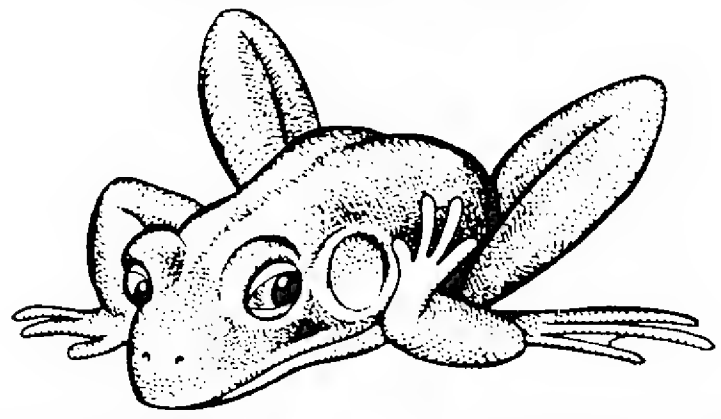
This month I want to break away from the column's usual format to write about recordkeeping and longevity. I received a letter from Tom Mordue of Denver, Colorado, concerning his pet bull snake, Abraxis Thought. Tom is a school principal now, but when he first began as a teacher at the Merritt Hutton Junior High School in Thornton, Colorado, a student in his 7th grade life sciences class presented him with a 4½-foot bull snake. The year was 1975. The snake had been caught in a field just north of Denver. Tom still has the snake so this spring he will have had the snake for 20 years. Since it was already 4½ feet long when it was caught, it was *at least* two or three years old at that time. This is a pretty long life for a wild-caught bull snake.

Some anecdotal facts about this snake: Its name is Abraxis Thought. Rats are kept under its cage in a cage labeled "Food for Thought." It has always been fed live food. It wouldn't eat for about the first two months, then began feeding regularly. It was kept in an aquarium furnished with a hot rock for about two years. Since then it has been kept in an aquarium in Tom's bedroom, without any heat source. The snake was never purposefully hibernated, but it did go through periods during which it wouldn't eat for a couple of months. Lately, the snake has slowed down quite a bit. It eats less often, is thinner, its eyesight seems bad and it can't catch live rats any more. So now Tom stuns the rats first and places them right in front of the snake's nose; this seems to be working.

So now back to recordkeeping and longevity. Many of you have been keeping reptiles for a long time. It's important to *record* the genus and species of the animal, the date you acquire it, how old it is, where it was found (locality) or by whom it was produced (whichever of these facts are known). Longevity data are lacking for some species, and perhaps some of you could share what information you might have. It is important to have as many details as possible for the data to have real scientific meaning. A side benefit is that it's nice to know, when you have an animal or are thinking of getting an animal, how long you might expect it to live.

I hope this has been an enjoyable change of pace. Please do keep sending in those cards and letters. If you would like to share a bit of knowledge that has helped you in taking care of herps, you can send it to: Chicago Herpetological Society, Helpful Herp Hints, 2001 N. Clark Street, Chicago IL 60614. Happy Herping!

The Tympanum



Dear Chicago Herpetological Society:

Goal: To avoid euthanasia of turtles illegally imported into Canada who people no longer want to keep as pets. To have the sale of pet turtles in pet stores within Canada banned.

Rationale: Humans have interfered with these wild animals and should be responsible for relocating them to their natural environment. This interference should be studied as to the impact it has.

I need your help if possible.

Four years ago, a worker from our Humane Society was in my veterinary clinic with a long face. I asked why. She said, "We've received three more turtles and we never know what to do with them." I said, "Give them to me" . . . to which she replied . . . "Will you take more?" I sure didn't realize at the time what "more" meant.

However, since December 1993, we have relocated 409 turtles back to their original range in the U.S.A. We always get permits from the states involved, as we must provide these to U.S. Customs for them to enter the country. However, we need a new release site or sites as we again have 120 turtles, plus a waiting list of 75, 35 more in the Edmonton Zoo, and they have a waiting list too. Calgary Zoo is interested in joining as well.

What we are ideally looking for is an area that is reasonably separate from wild populations, even though we realize the migratory ability of *Trachemys scripta* is very good. Also, what we'd like is someone who is interested in studying the impact of such a release on the ecology of the area of release. We would also like to be able to return some of the other species we have that are native to the same area, such as *Graptemys pseudographica.*

Any assistance you can give us will be appreciated.

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Herpetology 1995

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editors assume full responsibility for any errors or misleading statements. JCM

ENERGETICS OF THE SAND GOANNA

K. Christian and B. Weavers [1994, Copeia (2):289-295] measured the body temperature and activity (time spent in translocation) of *Varanus rosenbergi* by radiotelemetry for a total of 78 lizard-days during summer, winter and spring. The data and laboratory measurements of metabolism allowed estimation of the proportion of the total daily energy expended by animals in three types of behavior: resting in their burrows, sitting out of their burrows, and in activity. Although there is seasonal variation in the total energy expended per day, the proportions spent in the three types of behavior are similar during summer and spring, but a smaller proportion is expended for activity during winter. Nevertheless, the lizards are not completely inactive during the winter; they emerge from their burrows and spend several hours above ground, although the mean time spent in activity during this season is only 10.5 min/day compared to 47.6 and 22.2 min/day during summer and spring. The authors estimate the energy expenditure for the entire population to range from 23.6 kJ/ha/day during winter to 117.3 kJ/ha/day during summer. The time spent in activity by this species is strongly seasonal and is positively correlated to the daily solar radiation. However, even during summer, the season of greatest activity, the time spent in activity is not great (mean = 47.6 min/day; range = 12.3–141.3 min/day) compared to the tropical iguanas *Conolophis pallidus* (mean = 100 min/day) and *Cyclura nubila* (mean = 92 min/day) and the tropical varanid *V. panoptes* (mean = 228 min/day during the dry season, its season of greatest activity). Thus it is inappropriate to generalize all varanid lizards as being extremely active.

A NEW *ABRONIA* FROM CHIAPAS, MEXICO

J. A. Campbell [1994, Herpetologica 50(1):1-7] describes *Abronia ramirezi*, a new anguid species from western Chiapas, Mexico. This elongate, highly arboreal lizard is in the *bogerti* species group, together with *A. bogerti* and *A. chiszari*. This group has an unusual distribution because the species occur both east and west of the Isthmus of Tehuantepec and on both the Atlantic and Pacific versants. The distinctive morphology of the group suggests that it may represent a basal or sister lineage to the rest of the genus. Most *Abronia* inhabit pine–oak forest or cloud forest; the species of the *bogerti* group occur in lowland tropical rainforest below 1500 m. Currently the three species in the group are represented by four museum specimens; the author suggests that when more specimens become available, the subgenus *Scopaeabronia* may require elevation to generic rank. The author adds that two specimens in the *bogerti* group have been collected at a site 76 km northeast of the type locality of *A. ramirezi*. One was not preserved upon its death; preliminary examination of the living specimen suggests it is an undescribed species in the *bogerti* group.

SEASONAL COLOR CHANGE IN TWO SPECIES OF AUSTRALIAN ELAPID SNAKES

G. R. Johnston [1994, J. Herpetology 28(1):109-112] notes that color is an important aspect in the biology of most organisms and that some snakes have evolved genetic color polymorphism in response to environmental heterogeneity. He reports on spectrophotometric measurements made opportunistically on *Pseudonaja nuchalis*, *P. inframacula* and *Oxyuranus microlepidotus* held in captivity at the Whyalla Fauna Park, South Australia, and confirms earlier observations of seasonal color change in *P. nuchalis* and *O. microlepidotus*. His observations highlight a potential source of confusion between *P. inframacula* and *P. nuchalis*. *P. nuchalis* and *O. microlepidotus* show a clear change in reflectance between winter and summer, while *P. inframacula* shows no such change. The reflectance of a snake at visible wavelengths is a direct inverse measure of energy absorption because no visible light is transmitted entirely through the snake's body. In summer, *O. microlepidotus* and *P. nuchalis* absorb about half the thermal energy as in winter over the range of wavelengths measured. In winter *P. inframaculata* and *P. nuchalis* are both dark brown in some parts of Southern Australia and superficial identification becomes problematic.

CONCHO WATER SNAKE DIET

B. D. Greene et al. [1994, J. Herpetology 28(2):165-172] investigated the diet of the Concho water snake, *Nerodia harteri paucimaculata* from 1987 to 1990 by palpation of stomach contents. Prey remains representing 304 prey items were recovered from 192 individual snakes. Concho water snakes are almost completely piscivorous, feeding on 19 species of fish from nine families, with minnows (Cyprinidae) dominating numerically. Cricket frogs (*Acris crepitans*) represented the only non-piscine prey. Diet diversity increases ontogenetically according to snake body size. Observations of foraging snakes suggest an ontogenetic change in foraging sites concurrent with a change in diet composition. Prey size is positively correlated with snake body size although some snakes occasionally ingest numerous small prey, possibly due to opportunistic feeding on small prey aggregations. Snakes occasionally attempt to handle prey too large to be ingested. Feeding occurs from mid-March through early November. Gravid females feed throughout the spring into mid-July and resume feeding after parturition. Neonate and juvenile riverine snakes ingest prey in proportion to apparent availability while adults consume a disproportionate amount of larger prey species. Lacustrine snakes primarily consume prey associated with benthic or shallow water habitats. However, few individuals of open water and top water species are ingested, suggesting that prey habitat preference strongly influences catchability in lake systems.

SURVIVAL, GROWTH AND BODY SIZE IN ADDERS

A. Forsman [1993, Journal of Animal Ecology 62:647-655] examined survival in relationship to body size and growth rates in the adder, *Vipera berus*. Recapture data collected between 1986 and 1992 were used to examine the relationship between relative growth rate and survival. The proportion of individuals recaptured differed significantly among years in females but not in males. More males than females are recaptured, but the relationship between body size and survivorship does not differ between the sexes. The relationship between body size and survivorship varies among years. In 1987 survivorship decreased significantly with increasing snout–vent length. The pattern was significantly reversed the following year, when survivorship increased with increasing size. In 1990 individuals intermediate in size survived better than small or large individuals. No significant relationship between survivorship and size was detected in 1986 and 1989. The explanation of this variability is the fluctuation of food availability over time. There is no significant relationship between relative growth rate and subsequent survival. The author concludes that in temporally heterogeneous environments, allocation of resources to growth will influence future reproductive success differently in different years and that this may select for plasticity in life-history traits.

REPRODUCTIVE TRAITS IN CANADIAN GARTER SNAKES

P. T. Gregory and K. W. Larsen [1993, Copeia (4):946-958] study geographic variation in reproduction characteristics, especially litter size and neonate size, among several populations across Canada of the wide-ranging garter snake, *Thamnophis sirtalis*. Gravid females differ significantly in body size among sites. However, even after correcting for intersite differences in maternal body size, there are highly significant differences among populations in litter size and neonate size. Populations with large litters tend to have small progeny, but only weak evidence was found for a tradeoff between neonate size and litter size within populations. There is a conspicuous east–west difference in reproductive characters of snakes: snakes from eastern Canada are relatively small at maturity and produce large litters of very small young, whereas those from western Canada generally are large and produce small litters (for a given body size) of large young. Although litter size and size of neonates are both phenotypically plastic traits, the differences observed in this study are often much larger than those expected from simple environmental influences. The authors hypothesize that reproductive traits differ genetically between populations of this garter snake in eastern and western Canada.

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Unofficial Minutes of the CHS Board Meeting, January 13, 1995

The meeting was called to order at 8:10 P.M. by Marcia Rybak. Board member Mike Ross was absent.

Officers' Reports:

The Minutes of the December board meeting were read, corrected and approved.

The Treasurer's Report was read and approved.

Current CHS membership is 1,757. The new CHS Membership Directory has been printed. One hundred twenty-eight directories will be mailed out shortly to those who have placed orders for same.

Steve Spitzer announced that because of outside obligations he must resign as Vice-President for 1995. He will continue to participate in CHS activities to the extent he's able. On behalf of the CHS, the Board thanks Steve for his years of dedicated service. We all hope he'll be able to participate fully again soon.

Old Business:

Legislative: Chris Lechowicz reported that he has collected all material available from State of Illinois, CITES, and a variety of sources, and that he has cultivated relationships with various conservation officials. Chris Lechowicz, Mike Ross and Bob Bavirsha will meet toward the end of this month.

Shows: Volunteers are needed for talks at Lincoln Junior High School in Naperville, and at Tidye Phillips Elementary School in Ford Heights. Jack Schoenfelder will respond to Volo Bog's request for an exhibit.

Raffle: The December raffle was very successful. We are still in need of volunteers to assist Chuck Keating in running the raffle for 1995.

Programs: The board agreed that Tony Rattin did a great job as Program Chair.

Expo: Ron Humbert has been investigating various venues. The best option still appears to be Memorial Day weekend at Triton College. The first Expo committee meeting will take place at Ron Humbert's house on January 27 at 7:30 P.M.

Adoptions: Ben Entwisle must resign as Adoption Chair because of outside commitments. The board thanks Ben for an excellent job. Marcia Rybak will appoint a new Adoption Chair.

Renewal letter: Steve Spitzer moved and Jill Horwich seconded that discussion of the renewal letter be tabled until the February board meeting.

Director of Sales

Joan Moore is in the process of completing the 1994 Sales Report, which will be stored on disc at Mike Dloogatch's office. There was a discussion regarding strategies to increase book sales. Jack Schoenfelder moved and Jill Horwich seconded that the discussion be tabled until a later date. The motion carried.

New Business:

Meeting Venue: Rates for our meeting space at the Field Museum will double after February, 1995. Marcia Rybak and Mike Dloogatch have prepared a presentation for the Field Museum to see if we can negotiate a more reasonable arrangement. However, the CHS is looking for any suggestions as to a new meeting location. Please contact Marcia Rybak with any suggestions. Marcia Rybak plans to meet with the Chicago Academy of Sciences on February 1 regarding this issue.

Round Table

Jack Schoenfelder announced that the Valparaiso High School Science Olympiad, scheduled for February 28, 1995, needs helpers. Interested CHS members should contact Jack.

Jack Schoenfelder will prepare and file the CHS taxes again this year. A discussion was held regarding various tax issues.

Chris Lechowicz moved and Brian Jones seconded that the CHS establish a table at the Streamwood swap to distribute information on proper care and maintenence of herps, to sign up members and to answer questions regarding laws and husbandry. The table will be run by Chris Lechowicz together with any interested volunteers. CHS Care in Captivity information will be available at the table. The motion carried with Mike Ross, Chris Lechowicz, Gary Fogel, Art Nohlberg, Steve Spitzer, Steve Vick and Brian Jones voting in favor, John Driscoll, Jack Schoenfelder and Mike Dloogatch voting against, and Jill Horwich abstaining.

Ron Humbert announced that David Gust still hasn't paid the CHS for the $75 Neodesha cage he purchased at the 1994 Expo. When asked when we could expect payment, Gust informed Ron Humbert that he does not intend to pay us and that the CHS can sue him for the money. Steve Spitzer moved and Steve Vick seconded that the CHS cancel David Gust's membership and that pending completion of membership cancellation, all membership priveleges be suspended. The motion carried with John Driscoll opposing.

The board expressed its appreciation to Steve Swanson for allowing it to meet at the Grove Nature Center in Glenview.

The meeting adjourned at 10:19 P.M.

Respectfully submitted by the Recording Secretary,
Jill Horwich

Advertisements

Accrue more herpetological knowledge: Connect with your peers throughout North America and abroad. The HERPETOLOGY ONLINE NETWORK is active 24 hours/day. Any computer modem can access Herp-Net via (215) 464-3562 (300–1200 baud 8-N-1) or (215) 698-1905 (9600+ V32, V42bis.) Submit news via FAX: (215) 464-3561 any time.

Attention: the Varanid Information eXchange is a society of herpetoculturists sharing an interest in MONITOR LIZARDS. Members receive the bimonthly newsletter, *VaraNews*. Annual membership is: U.S., $10; foreign, $12 surface/$15 air. For a free copy, send a legal-size SASE to: Varanix, 8726D S. Sepulveda Boulevard, #243, Los Angeles CA 90045.

For sale: **HIGH QUALITY FEEDER ANIMALS** PRODUCED FROM THE BEST LAB DIETS AVAILABLE. Tenth year of production and supply of frozen feeder animals. All feeders can be removed one at a time from the bag; they are not frozen together. All orders **will arrive frozen**. Now offering *seven* sizes of mice: small newborn pinks, medium size pinks, large fuzzy pinks, extra large fuzzies/small hoppers, juvenile mice, young adults, and large adults. Also available are pinkie rats, baby chicks, and quail chicks. Orders sent special delivery, postage extra. **Free pricelist**. Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358, after 6 P.M. Central Time on weekdays, all day Saturday and Sunday.

For sale: *THE GOURMET RODENT*: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, 6115 SW 137th Avenue, Archer FL 32618, (904) 495-9024.

For sale: top quality mice, rats and Chinese dwarf hamsters. All sizes at competitive prices. Gary W. Allison, 919 Wyandotte Street, Bethlehem PA 18015, (215) 974-8975.

For sale: murine-pathogen-free rats and mice available in all sizes, live or frozen: pinkies, fuzzies, crawlers, small, medium and large. Frozen crawler mice in lots of 2000, $.17 each. Also available, full grown hairless mice. FOB shipping point. Master Card accepted. Call (518) 537-2000 between 8:00 A.M. and 5:00 P.M. or write SAS Corporation, 273 Hover Avenue, Germantown NY 12526 for prices and additional information.

For sale: high quality feeder mice. Shipped UPS Next Day Air. All mice are properly processed to insure a quality product. Fourth year of production and supply of frozen feeder mice. Prices: pinks, $25/100; fuzzies, $30/100; weanlings, $35/100. Also available are 4 oz.+ rats, $100/100. Quantity discounts available. The Mouse Factory, P.O. Box 85, Alpine TX 79831, (915) 837-7100, Ray Queen.

For sale: rodents and reptiles, Dallas–Ft. Worth Metroplex. J.R.'s Cowtown Critters, 1002 Harrison Avenue, Arlington TX 76011, (817) 460-RATS.

For sale: Pearlco ceramic heating elements, come in 60w, 100w and 150w, $25 each or 2/$48 plus shipping. In stock, Flex-watt and Ultra-therm heating products. **Frozen rodents** always available. Mice: pinks–crawlers, 3/$1; weanlings, 40¢; subadult, 50¢; adults, 65¢; large adults, 75¢. Rats: small, 85¢–$1; medium, $1.25–2.00; large, $2.25–2.75; jumbo, 3/$10. Call on quantity discounts [note: discount on orders picked up at CHS meetings]. Live rodents available at higher prices. **Available now**: updated fall newsletter/catalog—many unique/hard-to-find herp husbandry items. It's also baby snake season! Send business-size SASE for catalog, or call. Scott J. Michaels, D.V.M, Serpent City, P.O. Box 657, Island Lake IL 60042, (815) 363-0290.

For sale: FROZEN RODENTS. Mice pinks, $25/100; adults, $35/100; breeders, $55/100; rats, $75/100 and up, jumbo available occasionally. KJ's Rodents, R.R. 1, Box 266, Detroit Lakes MN 56501, (218) 439-6999.

For sale: SUPERWORMS, *Zophobas morio*, ultimate food for reptiles, birds, fish; $18.95/lb., plus $3 shipping. Keeps 8–10 months at room temperature, far less chitin for complete digestability. Send SASE for information to Joe Sutter, P.O. Box 59119, Birmingham AL 35259, (205) 871-5570, 4 P.M. - 7 P.M. Central Time.

For sale: turtle and tortoise chow, excellent food—1 lb, $5; 3 lbs, $10; 5 lbs, $15 (postage paid). Send cash, check or money order to Herp's Delight, Dept. C, 20 Ablett Avenue, Whitesboro NY 13492.

For sale: large selection of captive born reptiles and amphibians, books and supplies. Send S.A.S. business-size envelope for complimentary price list or $5 for a 1 year subscription (bi-monthly), to Twin Cities Reptiles, 540 Winnetka Avenue North, Golden Valley MN 55427, (612) 593-0298.

For sale: Tired of getting bitten while collecting, feeding or maneuvering animals? Try my Whitney tongs—10% discount to herp society members—2′, $65 each; 2½′, $66 each; 3′, $67 each; 3½′, $68 each; 4′, $69 each, 5′, $85 each; 6′, $90 each. Will ship U.P.S. extra. Send money order or cashier's check to Don Lunsford, 5661 Walkerton Drive, Cincinnati OH 45238.

For sale: collection of 120 different outdated antivenom/snakebite kits from all over the world, $600. Also, collector's item—snake catching box made and used by Carl Kauffeld. This is the box Carl used on his collecting trips to South Carolina, 30″l x 20″h x 12″w, three compartments, top opens and two side compartments. Box was never cleaned out and still has (unsoiled) *Staten Island Sunday Advance* newspapers dated April 17, 1977. See book *Snakes and Snake Hunting* for picture of box, $500. Steve, (516) 957-3624. [NY]

For sale: books. *Die Familie der Warane (Varanidae)* by Robert Mertens (1942), complete 3-volume monograph on the monitor lizards, near mint condition, $450/set; *Amphibians of Argentina* by Cei (1980), near mint condition, $125; *Reptiles del centro, centro-oeste y sur de la Argentina* by Cei (1986), mint condition, Spanish with English keys, $125; *The Rattlesnakes, Genera* Sistrurus *and* Crotalus by Gloyd (1940), original edition, near mint condition, $110; *The Life of Reptiles* by Bellairs (1970), 2-volume set, ex-library, good condition, $150/set; *The Cold-blooded Australians, A Unique Photographic Study of Australia's Reptiles, Amphibians & Freshwater Fish* by Schmida (1985), signed by the author, near mint condition, $95; *FitzSimons' Snakes of Southern Africa* by Broadley (1983 revision), near mint condition, $95. Include $5 for insured shipping. Ohio residents add 5¾% sales tax. The Herp House, 1750 Haines Road, Orwell OH 44076, (216) 685-4615.

For sale: (1) Set of *Snake Keeper* magazine, volume 1, number 1, through volume 3, number 11, one issue missing (June '87); (2) April '90 issue of *Snake Breeder* magazine; (3) Feb. '88 through Dec. '94 CHS *Bulletin*, 12 assorted issues missing. All items sold as a package only. Best offer or will consider trade for tricolors. Plains Reptile, P.O. Box 5818, Fargo ND 58105, (701) 235-7263.

For sale: 1995 HERPETOLOGICAL DIRECTORY. Valuable information source containing private and commercial breeders, wholesalers, foreign exporters, U.S. and foreign herp societies, food sources, supplies, publications, more. . . . $15. MC/Visa. Great Valley Serpentarium, 2379 Maggio Circle, Unit C, Lodi CA 95240, (209) 369-7737.

For sale: set of five posters first published by Army Air Forces Tactical Center for easy identification and habits of venomous snakes of the world, $9 postpaid; *Field Guide to the Snakes of South Vietnam* by Simon Campden Main, $10 postpaid; *Batrachia of North America* by E. D. Cope, $16 postpaid; *Laboratory Anatomy of the Iguana* by J. C. Oldham and H. M. Smith, $17 postpaid; *Time of the Turtle* by J. Rudloe, $5 postpaid; *Atlas of Amphibians and Reptiles of New Zealand* by C. P. Pickard and D. R. Towns, $18 postpaid. Catalog of over 4000 herpetological titles sent free upon request. Herpetological Search Service & Exchange, 117 E. Santa Barbara Road, Lindenhurst NY 11757, (516) 957-3624.

For sale: *Rattlesnake Hunting*, a 60-minute video by a 30-year veteran collector. Don't miss this one! It's as close to being in the field as you can get. (Not a slick commercial production.) Send check or money order for $19.95 plus $3 postage & handling to: D. Wheeler, 2705 Sunset Trail, Riverwoods IL 60015. Allow 4–6 weeks for delivery.

Advertisements (cont'd)

For sale: reptile cage disinfectant and deodorant. Kills many types of infectious disease detrimental to herps. $3.91 for 2 oz (makes 1 gallon). Wholesale and quantity prices available. Make checks payable to Bengal Pets, Inc., 1088 Chapman Road, Jesup GA 31545, (912) 530-6384.

For sale: overstock sale. Phillips plastic boxes (aka Wilson; Wilhold; Stillwell). Shoe boxes, $2.25 each or $25/dozen; high sweater boxes, $6.15. Serpent City, (815) 363-0290.

For sale: three stackable cages with stand (35″ × 18″ × 18″), with glass sliding doors, vents and access holes, attractive and functional, $180; one male and one female rosy boas, 1–2 years old, $180/pair. Marc, (708) 597-6172 weekday evenings.
For sale: male brown basilisk, long-term captive, proven breeder, 6″ SVL, 18½″ total length (the last 5″ of tail is regenerated), $65 + s/h. Brett De Poister, (610) 926-5712. [PA]

For sale: six female veiled chameleons, c.b. 10/94, $110 each. Joel Sayre, (206) 725-8684 phone or fax. [Seattle]

For sale: c.b. 1994 female Indonesian blue-tongue skink, $125; c.b. 1994 pair of Sinaloan milksnakes, $110; male red-tail boa, c.b. '94, nice pattern and disposition, $75; female northern pine, c.b. '93, nice contrast, $50. Jeff Dundek, (708) 361-5835.

For sale: juvenile green iguana, 5–6″ snout–vent length, wormed, x-rayed, in good condition, $20 obo. Rescued from pet store going out of business by vet tech who works for reptile veterinarian. Lisa, (708) 680-5849.

For sale: blue-tongued skinks (*Tiliqua scincoides intermedia*), c.b. July '94, beautiful colors/patterns, voracious feeders, growing fast, $150 each; veiled chameleons (*Chameleo calyptratus*), c.h. August & September '94, great feeders, well established, growing like weeds, $75 each. Several unrelated bloodlines available from both species. Dan or Phil, New York Reptilia, Inc., (718) 461-1371 phone, (718) 461-0749 fax. Closed Mondays.

For sale: rhinoceros iguanas; Cuban iguanas; green iguanas; *Geochelone sulcata*; *G. elephantopus* (Florida sales only). D. J. or Sam, (305) 680-8492. [FL]

For sale: one male and one female elongate tortoises, c.b. '93, $250/pair; three subadult and one huge female Solomon Islands boas, $250/group; three male and one female adult ball pythons, $200/group; one female Egyptian sand boa (*Eryx conicus*), c.b. '93, golden saddle, $150. Prices negotiable. Phone or fax to (305) 245-5603. [Miami]

For sale: two 7″ Geoffroy's sideneck turtles, $75 each; two 4″ diamondback terrapins, $50 each; one 3″ Kwangtung River turtle, $50. Wayne Roepke, (708) 398-3733.

For sale: adult African spurred tortoises (*Geochelone sulcata*). If you are considering working with this species, or want to add to an existing collection, please give me a call. Specimens available now. (909) 780-0715. [southern CA]

For sale: large male African spur-thighed tortoise, 6 years old, c.b., A+ condition. Nancy Gordon, (815) 485-6642. [Mokena IL]

For sale: African spurred tortoises (*sulcata*), variety of sizes. Also leopard tortoises, adults to c.b. hatchlings. Mark Domka, (612) 822-7996. [MN]

For sale: '95 offspring, reservations now being taken. Send SASE to R. Applegate, P.O. Box 338, Campo CA 91906, USA, (619) 478-5123.
Free snake husbandry problem consultations as a public service.

For sale: available now, all c.b.&b. stock. Andean milksnakes, $300 each; Borneo blood pythons, $130 each; two male white-lip pythons, $175; Macklot's pythons, $100 each; two male and one female Louisiana pine snakes, $300 each; b&w California kingsnakes, $50 each; desert kingsnakes, very nice, $40 each; male Baird's rat snake, $30. Write or call for price list and additional info. Terry L. Vandeventer, Arco Iris Herpetoculture, 1016 Andover Street, Clinton MS 39056, (601) 924-1409.

For sale: one male and one female Mexican milks, proven breeders, $175 each or $300/pair; one male and one female Pueblan milks, proven breeders, $225 each or $400/pair; one male and one female 2-year-old yellow rats, $100/pair; 2-year-old male Sinaloan milk, $100; one male and one female Sinaloan milks, proven breeders, male is absolutely perfect—Schuett stock, $250 each or $400/pair; 1-year-old male and 2-year-old female "red" western hognose snakes, $200/pair [permit required in IL]; female "green" western hognose, $65 [permit required in IL]; albino striped male Cal. king, proven breeder, $125; 5′ male green tree python, 5½ years old, bred this season and last, proven male, just shed and back on feed, eating 200 g, fresh-killed rats off forceps, lots of blue spots and dog-tame, $1250. All prices are negotiable. Robert, (312) 927-8617 phone, (312) 927-8618 fax.

For sale: male c.b. '93 desert rosy boa, $100; one male and one female c.b. '93 mid-Baja rosy boas, $300/pair; two male and two female c.b. '91 Mexican rosy boas, $300/pair; three male and three female c.b. '91 coastal rosy boas, $250/pair; one male and one female c.b. '94 Colombian rainbow boas, $175/pair. Trades considered for c.b. blue-tongue skinks, Dumeril's boas, emerald tree boas, jungle carpet pythons. Mark Wendling, (319) 857-4787. [IA]

For sale: c.b. subadult Solomon Islands boas, *Candoia carinata paulsoni*, feeding well on dead mice, $75–175. Neonates born 1/4/95. Steph Porter, St. Paul MN, (612) 690-2589.

For sale: Cutting back collection size. One male and two female adult Tatar sand boas, *E. tataricus vittatus*, $135; '94 Dumeril's boas, $300; juvenile ('94) olive pythons, *Morelia o. olivaceus*, $1200; 10′ adult male olive python, $1300; one male and one female amethystine pythons (*kinghorni*), 9′–10′, (I paid $975 for these 4 years ago), $600/pair; one male and one female bar-neck amethystine pythons, 8′–10′ (raised from 3′), $600/pair. All adult snakes are long-term captives. David Sorensen, 4100 N. 78th Street, Milwaukee WI 53222, (414) 463-6164.

For sale: Gaines Reptiles, Inc., is now taking deposits on 1995 c.b. snakes and Australian skinks—15% DISCOUNT on orders placed before June 1, 1995. Albino boa constrictors, Brazilian rainbow boas, small-blotched (spotted) pythons, albino Querétaro kingsnakes, Tarahumara mountain kingsnakes, San Pedro mountain kingsnakes, Durango mountain kingsnakes, northern blue-tongue skinks, pink-tongue skinks and other choice species for the discriminating collector and investor. Also, "one time only," one male and one female amelanistic red-phase mole kings (a first?) for $1000. For 1995 price list send $2 and SASE to Bill Gaines, Gaines Reptiles, Inc., 6 Pine Tree Lane, Trafalgar IN 46181, or call (317) 261-8417 daytime or (317) 878-4042 evenings.

For sale: two female Timor pythons, c.b. '90, beautiful, ready to breed, $1500 each; one male and one female Savu Island pythons, 3–3½′, in captivity one year, rat eaters, nice, $500 each; one male green tree python, c.b. '93, 3–3½′, some black flecking, Bill Tropp stock, rat eater, tame, $925; one male and one female green tree pythons—male c.b. '92, bright green, hand tame—female long-term captive (one year), yellow blotched—both are aggressive rat eaters, very pretty, $2500/pair; one male Malaysian blood python, c.b. '94, nice, $250; 10 Kenyan sand boas, c.b. '94, nice orange, $45 each, 5 @ $35 each, 10 @ $30 each; one male Amazon tree boa, c.b. '94, pretty "garden phase," $75. Will trade for subadult/adult Amazon tree boas, unusual carpet pythons or outstanding *thayeri*. (619) 287-3937. [San Diego]

For sale: one male and one female c.b. '94 Dumeril's boas (Marzac stock), unrelated to each other or any other U.S. bloodlines, well started on rat pups, $700/pair; one male and one female diamond × carpets, c.b. '94, just starting to turn yellow, eating rat pups, $550/pair; three female c.b.&b. ball pythons, growing fast, $75 each or $200/group. Gary Schiavino, (908) 321-0859, leave message. [NY]

Advertisements (cont'd)

For sale: captive-bred snakes. Blood pythons, ball pythons, Burmese pythons, Kenyan sand boas, corn snakes, Illinois bull snakes. Will deliver in Chicago metro area or ship from O'Hare Airport. Joan Moore, (312) 528-4631.

For sale: 6′ female Colombian red-tailed boa, *Boa c. constrictor*, in excellent condition, $250. Jeff Weege, (414) 367-6146 evenings. [WI]

For sale: 6½′ male common boa constrictor, nice disposition, golden body color, $75. Ralph, (708) 205-9890.

For sale: Peruvian red-tail boa constrictors (*Boa constrictor ortoni*), c.b. 9/94, beautifully marked, $275. Bruce Shwedick, (813) 757-0807. [FL]

For sale: two male and one female c.b./c.h. (early '93) ringed pythons, flawless specimens in excellent health, extremely iridescent, voracious feeders, $2000 for the trio, $750 each. Jeff Early, (713) 359-8367 after 9:30 P.M. Central Time. [TX]

For sale: male diamond python, c.b. '93, with paperwork, $3000; 5′ male red phase Malayan blood python (*Python curtus brongersma*), c.b. '91, $350; three male Madagascan ocelot geckos (*Paroedura pictus*), c.b. '94, blond phase 2–6 months old, $45 each; two male and one female boa constrictors, c.b. '93, $400/group; male albino Burmese python, possible hetero for albino–green, c.b. '93, $185; one male and one female 9′ Burmese pythons, c.b. '92, $200/pair. Steve Bostwick, (515) 967-5716. [IA]

For sale or trade: c.b. female Papuan olive python (*Liasis papuanus*), 9–10′, tame, excellent feeder on live or frozen rodents, $500. Tom, (602) 967-6265. [AZ]

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Tours: Five-day South Carolina herp and fossil tours, April–November 1995. Mini expeditions in search of 30-million-year-old turtles and crocodilians; living reptile hunts (vipers, king and rat snakes, turtles, anoles, broadhead and five-lined skinks, treefrogs and other amphibians), exotic reptile shopping and camping in a black water swamp forest. Finest Charleston hotels beginning and end of each tour. Twelve people per tour. Family plans available. $489. For reservations call Steve Faust, (800) 894-TOUR.

Tours: **Grab this trip quick!** Experience the magnificence of the Amazon aboard the SS Delfin. Join **William W. Lamar**, co-author of *The Venomous Reptiles of Latin America* in **Peru** for the herp-hunting trip of a lifetime. From 50 to 100 species of reptiles and amphibians are generally encountered per trip. I have reserved space for 14 persons, July 8–15, 1995, with Green Tracks Inc. **Cost: 8 DAYS ALL-INCLUSIVE FROM MIAMI, $1895.** (Optional one-week extension available.) **Recruit your friends!** Price per person will reduce according to the number of participants. A deposit of $200 will reserve a place. For additional information call Green Tracks Inc. at (800) 9-monkey or trip co-leader **Bill Lamoreaux** at (214) 946-3588.

Tours: Custom-designed tours to Costa Rica, Panama, Belize and Guatemala. Expeditions to fit the specialized needs of herpers, photographers, educators, writers, professionals in search of data, and travelers just interested in visiting these countries (with or without their families). From $649. Steve Faust, (800) 894-TOUR.

Wanted: herpetological books. *Antillean Terrapins* by Barbour and Carr (1940), *Reptiles of Israel* by Barash and Hoofien (1956), *The Lizards of the Philippine Islands* by Taylor (1922), *Monograph of the Tailed Batrachians of Japan* by Sato (1943), *Tortues et Crocodiles de l'Afrique Noire Francaise* by Villiers (1958). Dr. Ken Dodd, 5222 NW 56th Court, Gainesville FL 32653, (904) 377-4319 evenings.
Wanted: marginated tortoises, prefer juveniles or subadults. Phone or fax to (305) 245-5603. [Miami]

Wanted: black kingsnakes (*Lampropeltis getula nigra*), prefer c.b. hatchlings or older. Locality data important. Bart Bruno, (203) 773-9257. [CT]

Wanted: *Uromastyx acanthinurus*, *U. benti* and *U. ocellatus*. Randy Gray, (817) 613-1242 evenings Central Time. [TX]

Wanted: sand boas (*Eryx elegans*, *E. jayakari*, banded *E. johni*, *E. muelleri* and *E. somalicus*). David Sorensen, 4100 N. 78th Street, Milwaukee WI 53222, (414) 463-6164.

Wanted: brilliant yellow *Lampropeltis getula "brooksi"*, *L. g. sticticeps*, 85% yellow or more banana *L. g. californiae*, 60% white or more desert phase *L. g. californiae*, high yellow examples of *L. g. holbrooki*, red/orange and black *L. g. goini*, and black & white specimens of *L. g. goini* such as the animal pictured on plate 590 in the Audubon Society field guide. Will pay cash or trade my quality *Lampropeltis getula* ssp. hatchlings for the animals I want. Kirk Setser, 414 Wickham Road, Manhattan KS 66502, (913) 537-9449.

Wanted: vendors for the Texas International Reptile Trade Show, May 27, 1995, in Irving TX (c.b. animal sales only). For more information call Brian or Billie at ph/fax (214) 256-3098.

Wanted: styrofoam boxes, any size or shape so long as they're not flimsy, preferably with cardboard liners, willing to pay from $2 to $5. Bring to CHS meetings. Scott J. Michaels, D.V.M, Serpent City, (815) 363-0290.

Wanted: the CHS Book Service is always in need of styrofoam "peanuts" for packaging shipments. Don't discard them; recycle by bringing them to Joan Moore at any monthly meeting.

Line ads in this publication are run free for CHS members — $2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to: Michael Dloogatch, 6048 N. Lawndale Avenue, Chicago IL 60659, (312) 588-0728 evening telephone or (312) 782-2868 fax.

WEZAM EXOTICS CONFERENCE

The WEZAM Club (Wildlife, Exotic and Zoo Animal Medicine) at the University of Wisconsin School of Veterinary Medicine will hold its fourth annual WEZAM Exotics Conference, April 22–23, 1994, in Madison, Wisconsin. This year's conference will focus on disease management, diagnostic techniques, reproduction and anesthesia of avian, aquatic and reptile species. Call the WEZAM office for more information at (608) 265-6319.

SPECIAL SPECIES MEDICINE SYMPOSIUM AT CORNELL UNIVERSITY

The 3rd biannual Special Species Medicine Symposium will be held at Cornell University's College of Veterinary Medicine, April 7–9, 1995. Topics will include avian, aquatic, herp, camelid and other zoo animal medicine as well as issues such as ESA/SSP, husbandry, etc. For more information or registration packets contact Judy Bardsley, 541 Ellis Hollow Creek Road, Ithaca NY 14850, (607) 539-6174.

HERPETOLOGY WEEKEND IN KENTUCKY

The U.S. Forest Service, the MVS Reptile Zoo, the Kentucky State Parks and the Kentucky Department of Fish & Wildlife Resources will cosponsor a Herpetology Weekend, May 19–21, 1995, at the Natural Bridge State Park, Slade KY 40376. Activities will include field trips (collecting prohibited), night hikes, photo opportunities and a tour of the MVS Reptile Zoo. There will be presentations by: Dave Dennis, Ohio State University; Jim Harrison, MVS Reptile Zoo; John MacGregor, U.S. Forest Service; James Kiser, Eastern Kentucky University; Greg Sievert, University of Tennessee; and Wayne Van Devender, Appalachian State University. For additional information contact Natural Bridge State Park, Slade KY 40376, (606) 663-2214 or (800) 325-1710, or the Stanton Ranger District, Stanton KY 40380, (606) 663-2852.

INTERNATIONAL CONGRESS OF CHELONIAN CONSERVATION

The International Congress of Chelonian Conservation will be held in Europe, more precisely at Gonfaron, southern France (near Nice), July 6–10, 1995. The organizing body is SOPTOM (Station d'Observation et de Protection des Tortues), a tortoise conservation association, founded in 1985, which developed and now operates the "Tortoise Village" conservation center at Gonfaron. For information contact SOPTOM–CONGRES, B.p. 24, 83590 Gonfaron, France, tel: (33) 94 78 26 41, fax: (33) 94 78 24 27.

SPECIAL OFFER TO STUDENT HERPETOLOGISTS

As an incentive to join and to attend its August meeting, the Society for the Study of Amphibians and Reptiles (SSAR) is making a special offer. All student SSAR members who register for and attend the August 8–13, 1995, meeting in Boone, North Carolina, will receive a free copy of Pritchard and Trebbau's 1984 classic, *The Turtles of Venezuela*. The list price of this 414-page, clothbound book is $45.00. To take advantage of this one-time-only offer, you must already be a student member of SSAR or join before the Boone meeting.

1995 MIDWEST HERPETOLOGICAL CONFERENCE

Sponsored by the

Chicago Herpetological Society

October 20–22, 1995

Clarion Hotel O'Hare • 6810 N. Mannheim Road • Rosemont, Illinois

- **Friday night Breeder's Exposition**
- **Friday night Reception**
- **Saturday night Banquet and Auction**
- **Saturday speakers: Walter Auffenberg; Sandra Barnett; Stephen Barten, DVM; Michael Corn; Carl Ernst; Gary Fogel; and more**

Save the dates and watch the *Bulletin* for registration information when it becomes available

UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, February 22, at the Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, in Chicago. Dr. James Gillingham of Central Michigan University will speak on "Foraging Behavior in Garter Snakes." Jim has given us several excellent programs in the past on such diverse topics as courtship in snakes, field work on tuataras, and Puerto Rican snakes. Look forward to an interesting, entertaining and informative evening.

We are required to use the entrance on the west side of the museum. We have permission to use the staff parking lot to the west of the museum. Entrance to this lot is from McFetridge Drive, the wide street just to the south, between the museum and Soldier Field. There is also free parking available in the lot to the north of the museum.

The #146 CTA bus goes directly to the museum. Unfortunately, it does not operate after 9:00 P.M. However, after the program anyone needing a ride to a CTA stop will have no trouble finding one—just ask any board member.

Turtle Club

The Chicago Turtle Club will meet Sunday, February 19, 1:00–3:30 P.M., at the Emmerson Park Field House, 1820 W. Granville Avenue, in Chicago.

DONATIONS TO THE DECEMBER 28 RAFFLE

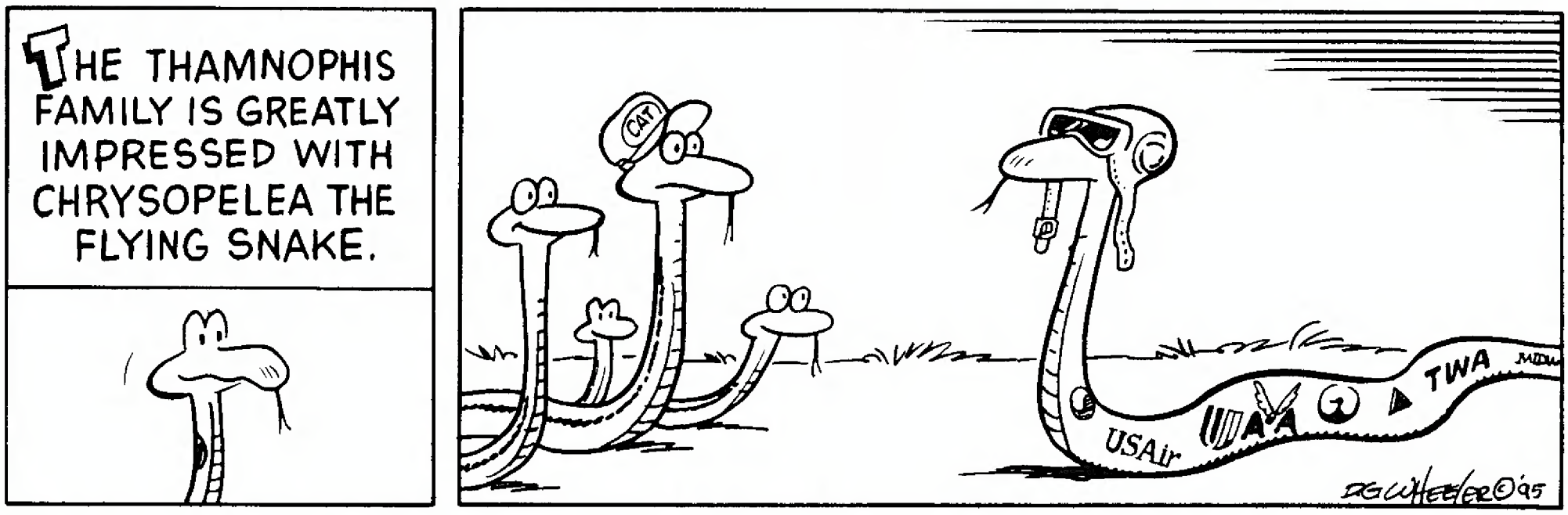
The following is a listing of those individuals and businesses who generously donated items for our monthly raffle at the December 28 meeting. The donated items are shown in parentheses.

Ghann's Cricket Farm (cricket gift certificate); Reptile News Press (*Guide to the Monitors*, tarantula mug, water monitor mug); Tetra Terrafauna (land tortoise food, chameleon poster); Valentine Equipment (terrarium moss); ZooMed (ReptiCave); Grubco (mealworm gift certificate); Rep-Cal (Rep-Cal T-shirt); Advanced Vivarium Systems (*The General Care and Maintenance of Green Anoles*); Fancy Publications (subscription to *Reptiles*); Marcia Rybak (aquarium rock); Pretty Pets (aquatic turtle food); Flukers Farms (Cajun Crickets); Wayne Thompson (large aquarium); Aquascape Aquarium Co. (deluxe reptile hood); Mardel Laboratories (Wound R_x); Terrarium Art (rock cave); Midwest Custom Products (sexing probes); Ilene Sievert (assorted live plants); Scott Michaels–Serpent City (Nekton Rep); Karen Furnweger (*Aquaticus* magazine); anonymous (wooden turtle).

18TH ANNUAL ALL FLORIDA HERPETOLOGY CONFERENCE

The 18th annual All Florida Herpetology Conference will take place on Saturday, April 22, 1995, at the Reitz Union Auditorium of the University of Florida, Gainesville. This conference is cosponsored by the Florida Museum of Natural History and the Gainesville Herpetological Society. Speakers will include: Walter Auffenberg, Florida Museum of Natural History; Harvey Lillywhite, University of Florida; Peter May, Stetson University; Joseph Mitchell, University of Richmond; David Barker, V.P.I., Inc.; Dante Fenolio and Michael Ready; Ray Pawley, Brookfield Zoo; Kevin Wright, Philadelphia Zoo; David Auth, Florida Museum of Natural History; Greg Brock, Florida Department of Environmental Protection; James Cox, Florida Game and Freshwater Fish Commission; and Bob Herrington, Georgia Southwestern College. There will also be workshops and an evening barbecue and auction. For information, call David Auth at (904) 392-1721.

THE ADVENTURES OF SPOT



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